



## A STUDY OF POST OPERATIVE COMPLICATIONS OF THYROID SURGERY AND THEIR MANAGEMENT

**Dr P.Chaitanya Kumar Reddy**

Assistant professor, Department of General Surgery, Narayana Medical College, Nellore/Dr. NTR University of Health Sciences, AP, INDIA.

**Dr K Vijay Babu\***

Postgraduate student, Department of General Surgery, Narayana Medical College, Nellore/Dr. NTR University of Health Sciences, AP, INDIA.

\*Corresponding Author

### ABSTRACT

**Background:** Thyroid swelling is one of the most common complaint of patients presenting to the surgery OPD. Depending on the diagnosis, while some of the patients are started on medical treatment, some patients undergo surgical treatment. The type of surgery performed varies depending on the diagnosis. While post operative complications are rare in the hands of experienced surgeons, they may cause considerable morbidity if the occur. However, most of the complications are manageable.

**Aim:** To study the post operative complications of thyroid surgeries and their management.

**Material and Method:** The study material consisted of 100 patients with thyroid swelling who underwent elective thyroidectomy at Department of General Surgery in Narayana General Hospital attached to Narayana Medical College, Nellore.

**Results:** In this study post operative hypocalcaemia, temporary recurrent laryngeal nerve paralysis and airway obstruction were noticed and they were successfully managed.

**KEYWORDS :** Hypocalcaemia, Post operative complications, Recurrent laryngeal nerve (RLN) paralysis, Thyroidectomy.

### I. INTRODUCTION

Thyroid disorders are one of the most common cause of metabolic disturbances, with surgery forming the main stay of treatment of thyroid swellings. Thyroid surgery in the hands of experienced surgeons is currently one of the safest procedures performed. While complications following thyroidectomy are rare, their consequences can often be debilitating and even life threatening when they occur. The major complications include postoperative hemorrhage, wound infection, hypocalcaemia, respiratory obstruction, thyroid storm, hypoparathyroidism and laryngeal nerve injuries. This study intends to assess the occurrence of various postoperative complications following different thyroidectomy procedures and the role of adequate preoperative patient preparation, careful and meticulous surgical technique and early recognition of postoperative complications with the prompt institution of treatment in reducing morbidity and providing the patient with the best chance of a satisfactory outcome.

### AIM OF STUDY

- To study the postoperative complications of thyroid surgeries and their management.

### II. MATERIAL AND METHODOLOGY

The study material consisted of 100 patients with thyroid swelling who underwent elective thyroidectomy at Department of General Surgery in Narayana General Hospital attached to Narayana Medical College, Nellore. A detailed history was taken from all the patients. A thorough clinical examination along with examination of other systems was performed. Apart from routine laboratory tests, serum calcium, electrolyte, thyroid profile, FNAC, indirect laryngoscopy, ECG, Echo, Xray Chest & Neck and USG of Neck & Abdomen were performed. Patients who were fit to undergo surgery were included in the study. Patients were monitored from time of admission till 3months postoperatively. The operated specimen was sent for histopathological examination. The different types of surgeries performed were total thyroidectomy, total thyroidectomy with parathyroid autotransplantation, subtotal thyroidectomy, hemithyroidectomy and Dunhill procedure.

### III. OBSERVATIONS AND RESULTS

In this study the various postoperative complications following

thyroid surgeries which occurred in 100 patients in the Department of General Surgery at Narayana General Hospital were analyzed. Patients between 20 to 60 years were included in this study. Youngest patient was 22 years old and oldest patient was 55 years old. While 81 patients in this study presented with complaint of swelling in the neck, 19 patients presented with swelling in the neck associated with pain.

**Table 1 Age Wise Incidence of Complications**

Age Group in Years	No. of Cases	No. of Cases with Complications	Percentage
20-30	10	02	20%
30-40	60	15	25%
40-50	15	02	13.33%
50-60	15	01	6.66%
Total	100	20	20%

Most of the patients in this study were in their 4th decade of life and so the complications were also more in this age group. The total incidence of complications was 20%.

**Table 2 Sex Wise Incidence of Complications**

Sex of Patient	No. Of Cases	No. Of Cases with Complications	Percentage
Male	10	03	30%
Female	90	17	18.9%
Total	100	20	

In this study while 30% of the male patients who underwent surgery experienced complications, 18.9% of the female patients experienced complications.

**Table 3 Incidence of Complications with reference to Histopathological Diagnosis**

Histopathological Diagnosis	No. Of Cases	No. Of Cases with Complications	Percentage
Multinodular Goitre	64	13	20.31%
Diffuse Colloidal Goitre	03	02	66.66%
Hashimoto's Thyroiditis	04	01	25%
Solitary Thyroid Nodule	16	03	18.75%

Papillary Carcinoma	08	01	12.5%
Follicular Carcinoma	05	nil	nil
Total	100	20	20%

In this study, the highest incidence of complications was noted in patients with diffuse colloid goitre (66.66%) and lowest incidence was noted in patients with papillary carcinoma (12.5%). The most common histopathological diagnosis was multinodular goitre. The operative procedures performed depended on the preoperative diagnosis. The various procedures performed and the incidence of complications is as follows:

**Table 4 Incidence of Complications with reference to the type of Thyroidectomy**

Type of Thyroidectomy	No. of Cases	No. Of Cases with Complications	Percentage
Total Thyroidectomy	63	13	20.63%
Total Thyroidectomy + MRND	02	01	50%
Subtotal Thyroidectomy	18	03	16.66%
R/L Hemithyroidectomy	16	03	18.75%
Dunhill Procedure	01	Nil	nil
Total	100	20	20%

Total thyroidectomy was the most common surgery done with 20.63% incidence of complications. The highest incidence of complications i.e., 50% was noted with total thyroidectomy + MRND which was 50% done for papillary carcinoma.

**Table 5 Post Operative Complications and their Incidence**

Post Operative Complication	No. of Cases	Percentage
Transient Hypocalcemia	12	12%
Transient RLN Palsy	06	06%
Airway Obstruction	02	02%
Total	20	20%

Though there are several complications of thyroid surgery, in this study only transient hypocalcemia, transient RLN palsy and airway obstruction were noted which were effectively managed with calcium supplementation, steroid therapy and temporary tracheostomy. Transient hypocalcemia was the most common complication noticed in this study with incidence of 12%.

Patients who developed hypocalcemia became normocalcemic around 2 months after surgery.

Temporary RLN palsy and airway obstruction were managed with temporary tracheostomy. Patients who had temporary RLN palsy and airway obstruction recovered within 3 months period.

#### IV. DISCUSSION

In this study, 100 patients who underwent various thyroid surgeries were studied to analyze the occurrence of different early postoperative complications. The youngest patient was 22 years old and oldest patient was 55 years old. Maximum no. of complications occurred in the 30-40 years age group i.e., 25% and the lowest incidence of complications i.e., 6.66% was noticed in 50-60 years age group.

The male : female ratio of cases was 1:9. Incidence of complications was 30% in males and 18.9% in females. The most common indication for surgery was multinodular goitre in 64% of cases and most common surgery performed was total thyroidectomy in 63% of cases. The total incidence of complications was 20% and the most common complication was transient hypocalcemia in this study i.e., with incidence of 12% which correlates well with the study of Richmond et al. [1]

who noticed an incidence of 13%. Transient RLN palsy which was noticed in 6 patients with incidence of 6% is more when compared to the studies of Chow et al. [2] who noticed an incidence of 2%. Other complications like wound infection, wound hematoma and thyroid storm were not seen in this study similar to the studies of Steurer et al. [3] and Erbil et al. [4]. The highest incidence of complications was seen with total thyroidectomy and in multinodular goitre. All the patients with complications were effectively managed and they recovered completely within 3 months period.

#### V. CONCLUSION

This study was conducted to assess the outcome of various thyroid surgeries done in 100 patients admitted to the surgical wards of Narayana General Hospital, Nellore. The only three complications noted in these 100 patients were transient hypocalcemia in 12 patients, temporary RLN palsy in 6 patients and airway obstruction in 2 patients. All the complications were temporary which were effectively managed and the patients recovered completely within 3 months period. No case of permanent laryngeal nerve paralysis occurred in our study. Other complications like wound infection, wound hematoma and hemorrhage and thyroid storm were not noticed in our study. It can be concluded that a good understanding of thyroid gland anatomy, improved techniques in hemostasis, RLN dissection, preservation of parathyroid glands and postoperative monitoring have caused steady decline in the incidence of postoperative complications following thyroidectomy. In addition appropriate postoperative care with early identification of complications and prompt institution of corrective treatment plays an important role in reducing the duration of postoperative hospital stay and limiting patient morbidity.

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